

SHORTER NOTES

A NEW STATION FOR *COELOPLEURUM ACTAEIFOLIUM*.—The seventh edition of Gray's Manual gives "Mass. to Greenl." as the range of *Coelopleurum actaeifolium* (Michx.) Coult. & Rose. In the *Bulletin of the Torrey Botanical Club* for February, 1914, Bicknell notes the occurrence of the species on the island of Nantucket and states that this "seems to be the southernmost point to which this northern plant has made its way." In July, 1916, the writer discovered the *Coelopleurum* near the western end of Fisher's Island, New York, growing in thickets close to the shore but not among the actual beach plants. This station is in about the same latitude as Nantucket but marks an interesting extension of range to the westward. The plants were numerous and robust and the bractlets of the involucels were, in some cases, strikingly large and conspicuous. Specimens have been deposited in the herbaria of Yale University, Harvard University, and the New York Botanical Garden.

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REVIEWS

Shreve's Vegetation Map of the United States*

There have been many more or less satisfactory attempts to map the forests or other natural vegetation of areas varying in size from a few acres to the whole world. When the area is small enough for one person to explore it pretty thoroughly, and the vegetation types are clearly defined and not much disturbed by civilization (as is the case in some parts of Florida, for example†) the task is simple enough. A vegetation map of the world or a whole continent is also comparatively easy to make, because only a few types need to be represented, and errors of

* A Map of the Vegetation of the United States. By Forrest Shreve. Geographical Review 3: 119-125, with folded map 12½ x 20 in. Feb. 1917.

† In the 7th Annual Report of the Florida Geological Survey (1915), following page 134, is a map of the vegetation of about 1000 square miles in the central part of the state, made by two young men with little or no botanical training, who did remarkably well under the circumstances. Many foresters have made equally good maps of areas of similar size.

a hundred miles or so in the location of their boundaries are scarcely noticeable.

But to map the vegetation of a country or state of average size satisfactorily requires much experience and rare judgment. One individual does not usually live long enough to examine every square mile of such an area, and it is therefore necessary to collate the work of several persons, whose points of view may vary considerably. And even if the exact location of every plant was known, the different types of vegetation often intergrade in all sorts of ways, so that it may be impossible to say within a few miles just where one ends and another begins. Again, where the transition from one type to another is complete within a few yards they may occur in such small patches that they cannot be indicated separately on a map of a whole state or larger area, and no two persons might agree on how to generalize them into larger categories. Another great difficulty, in populous regions like much of the eastern United States and Europe, is reconstructing the vegetation that has been destroyed or greatly modified by civilization.

For these reasons very few vegetation maps of the United States have been made. Dr. Shreve's is the best and most detailed thus far published. He takes the correct position that vegetation should be mapped for itself alone, completely ignoring all environmental factors, but clearly recognizes the difficulties of such an undertaking. His map, on a scale of 1 : 9,600,000, shows 18 generalized types of vegetation, indicated by different colors,* about equally divided between the eastern and western halves of the country. There are about seven types of desert and semi-desert, three mainly grass-land, two of open park-like forests, and six of ordinary forests. Brief descriptions, averaging about seven lines each, are given in the text.

Nothing is said about the normal frequency of fire, which the reviewer has found to vary greatly in different regions and different types of vegetation, and depends on the nature of the

* The engravers unfortunately did their work rather poorly. Some of the colors meant to be different are too much alike, and some meant to be the same are different; and there are no numbers or other symbols (as on the government soil maps, for instance) to assist the reader in identifying them.

vegetation itself as much as on any fundamental environmental factor.* The contrast between the California and Great Basin "microphyll deserts" (which have very little rain in summer) and the Texas and Arizona "succulent deserts" (which have frequent summer showers) in number of thorny plants might have been brought out, for thorns are abundant in the latter and comparatively scarce in the former.

"Pacific semi-desert" (which is chiefly confined to California) would doubtless be subdivided if a larger scale were used, for as here mapped it includes such diverse types as the chaparral thickets and live-oak groves of the coast ranges and the grassland and scattered white oaks in the great central valley. The term "semi-desert" too is about as inappropriate for the cool foggy coast north of Santa Barbara as it is for the hotter and drier but very fertile alluvial Sacramento valley.

The prairies of Long Island and Florida are justly omitted on account of their small size, but those of eastern Arkansas and the Louisiana-Texas coast region should have been mapped (see maps of those states in the fifth volume of the Tenth Census). The "southeastern evergreen-deciduous transition forest." should have been widened out considerably in both directions, especially in Georgia, and should have been represented also in northern Florida. (See map of Florida in *Geog. Review* 2: 362. Nov. 1916.) The pine-barrens of Long Island and New Jersey differ in many ways from those of the southeastern states, and are also widely separated from them.

"Northern mesophytic evergreen forest" is a large and heterogeneous category, extending with some interruptions from Maine to California and New Mexico (and corresponding approximately with Merriam's "boreal zone.")† Under this head seem to be included the dense spruce and balsam forests from Maine to Minnesota, with little or no grass and many berries, subject to fifty inches or more of snow every winter, and destructive fires once or twice in a century; the white pine and hemlock forests of

* See *Pop. Sci. Monthly* 85: 338 (footnote). 1914; *New Int. Encyc.* 22: 698-700. 1916; *Sci. Monthly* 4: 458. 1917.

† See map in his "Life zones and crop zones of the United States" (*U. S. Biol. Surv. Bull.* 10. 1898).

the Alleghany plateau in Pennsylvania; the giant redwoods of the California coast region, which seem to be almost exempt from fire and snow; and the open sunny yellow pine forests of the Sierra Nevada and central Arizona, with frequently burned grassy undergrowth similar in aspect to that of the southeastern pine-barrens. In the description of this type of forest there is no mention of the genus *Picea*, which is a very conspicuous element both in Maine and in the Rocky Mountains; and the white pine and hemlock, noted as characteristic, perhaps belong more properly to the "northeastern evergreen-deciduous transition forest."

"Swamps and marshes" is another diverse aggregation, including as it does the alluvial bottoms of the Mississippi and a few other rivers, with dense deciduous forests, the non-alluvial Dismal and Okefinokee Swamps, the treeless Everglades, and the salt marshes of the coast.

The alpine summits of New England and New York, as well as of Mt. Shasta, are not shown, probably because too small in area.

With the few exceptions here noted, the map gives an excellent bird's-eye view of the original vegetation of the United States. If it is compared with the latest geological, physiographic, and climatic maps of the same area many interesting correlations will be noted. It is to be hoped that other botanists who see Dr. Shreve's map will be stimulated to map their respective states or similar areas in a somewhat similar but more detailed manner. Perhaps in the not distant future it will be possible to employ statistical methods that will almost eliminate the personal equation; for example, to divide the country into natural geographical divisions* (based on soil, topography, climate, and all other significant factors), determine the relative abundance of the trees (or other plants where there are few or no trees) in each, and put on the map in order of abundance the names of enough to make up say 50 per cent, or better 75 per cent, of the total in each region. There will always be some difference of

* For a few recent maps of the United States or parts thereof that will serve pretty well for outlining the geographical divisions see Bowman's *Forest Physiography*, 1911, Hawley & Hawes's *Forestry in New England*, 1912, and N. M. Fennem in *Annals Assoc. Am. Geographers*, Vol. 6, 1917.

opinion about the limits of the geographical divisions, as there is in the case of species, genera, etc., but there should be none about the relative abundance of the species after the regions are once defined, and explored sufficiently.

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PROCEEDINGS OF THE CLUB

FEBRUARY 28, 1917

The meeting of February 28, 1917, was held in the morphological laboratory of the New York Botanical Garden at 3:30 P.M. with Vice-President Barnhart in the chair. Twenty-two persons were present.

The minutes of the meetings of January 31 and February 13 were read and approved. Dr. Michael Levine reported that the editorial board had cordially endorsed the proposition of Dr. Jean Broadhurst in regard to publishing in *TORREYA* a greater number of abstracts and reviews of botanical literature.

For the committee appointed to consider the application of Mr. Norman Taylor for a grant of \$200 from the Esther Herrman Fund, Dr. Marshall A. Howe made a preliminary report to the effect that the income of this fund had for the present been set aside for the promoting of the natural history survey of Porto Rico.

A communication was read announcing the death of one of the Club members, Mrs. Cynthia Wood, on February 7. There was read also a letter announcing the death of Rev. E. J. Hill, a well-known botanist of Chicago, who had been for many years a subscriber to the Club's publications.

The resignations of Dr. Chester A. Darling and Mr. Joseph E. Brown were accepted.

The following persons were elected to membership: Professor O. S. Morgan, Columbia University, N. Y. City; Prof. H. C. Beardslee, Asheville, N. C.; Mr. Harry Braun, Columbia University, N. Y. City; Prof. J. Franklin Collins, 468 Hope St., Providence, R. I.; Mr. G. E. Meckstroth, University Club, State College, Pa.